TVS-AP-81-113

The Development of the Ridesharing Program in Ontario

Alternatives
Pilot Demonstration
Outreach

Ontario

Ministry of
Transportation and
Communications

Policy
Planning and
Research Division

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Affordable Transportation in Ontario

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FOREWORD

The three sections of this report were originally published as separate papers and have been amalgamated due to wide public interest. The information given in the first paper, "Affordable Transportation in Ontario," is further expanded upon and updated in the two following papers, "The Ontario Share-A-Ride Program" and "Development of an Integrated Ride Sharing Program to Conserve Energy and Prepare Shortfalls."

CONTENTS

ABSTRACT

High construction costs, economic constraints, oil shortages, and public attitudes have created pressures to find more efficient means of utilizing existing transportation facilities. Of particular concern are the declining occupancy rates for both public transit and automobiles. The Ontario Ministry of Transportation and Communications has adopted the promotion of paratransit services, with emphasis on low cost options involving a high degree of private organization, in its strategic guidelines for the period 1979 to 1984.

A general action plan has been developed involving the evaluation and preparation of proposals for the staged introduction of a number of different service options in their appropriate settings. There are three phases to the plan. Phase I involved the assessment of different modes of paratransit elsewhere, the opportunities in Ontario, and legal and regulatory barriers to implementation. Shared-ride taxi service, car and vanpooling were found to have considerable potential. Since completion of the legal studies, ammendments have been passed to the Public Vehicles, Highway Traffic and Negligence Acts enabling most types of car and vanpool schemes to operate and simplifying the liability and insurance implications.

Phase II of the plan, now being implemented, involves pilot demonstrations in car and vanpooling and further studies of specific opportunities identified in Phase I for shared-ride taxi operations, priority treatment of high occupancy vehicles, and the use of peripheral parking lots to encourage commuter transit services and car and vanpooling. Studies are also being carried out to evaluate the potential benefits to be derived from these options and to determine appropriate levels of Government support and effort. Phase III of the plan will be general implementation.

Results of a pilot carpool demonstration at the ministry's headquarters have been favourable. Strong employee support was shown for both the program and the incentive measures to promote and facilitate carpooling, such as priority parking and neighbourhood meetings. Plans have been prepared to expand the ministry project to include vanpools and to carry out more extensive demonstrations with a number of large companies in Toronto involving both car and vanpooling.

ACKNOWLEDGEMENT

Many Ministry staff have been involved in and responsible for carrying out the studies reported on in this paper. The authors would particularly like to acknowledge the contributions and assistance provided by the following: Paul Dickey, Jerry Hajek, Paul Jenkins, Dave Peckarsky, Douglas Smith, and James Wong.

CONTENTS, Part 1

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1/ INTRODUCTION

Since 1950, there has been a steady increase in the proportion of urban trips carried by the automobile. Lower vehicle occupancies, rapidly rising costs for equipment and labour, and more recently the desire to keep transit fares low to maintain or increase present levels of transit ridership, have led to rapidly spiralling requirements for transit subsidy which have been increasingly difficult to meet.

The growth in automobile travel has also been accompanied by a decline in average automobile occupancy. In Metropolitan Toronto, peak hour auto occupancy has fallen from 1.6 persons/vehicle in 1955 to 1.25 in 1974. The high cost of construction of new facilities, current economic constraints, dwindling oil resources, and increasing public pressure to curb the deleterious effects of automobile travel in our cities, have led to a search for more efficient methods of utilizing our existing transportation facilities. Reducing peaking characteristics and increasing average vehicle occupancies for both transit and automobile are key goals in this search.

Paratransit, which consists of a family of transportation services, may have considerable potential for achieving these goals. As a result, the Ontario Ministry of Transportation and Communications has included the promotion of paratransit services in its strategic guidelines for the period 1979 to 1984, and a general action plan has been developed.

References to paratransit are often understood to mean dial-a-bus operations. These are generally implemented as an extension of conventional bus service and are characterized by many of the same constraints regarding the use of the vehicles and the hiring of full-time drivers. The resulting cost per passenger trip is generally higher than for fixed route transit service, and it is only in a few locations with specific characteristics that dial-a-bus service can be economically justified. There are many other cheaper forms of paratransit which are considered in the category of affordable transit. They include shared-ride taxi, jitneys, subscription bus services, car and vanpooling. These operations are generally characterized by a high degree of private organization which is one factor contributing to low operating costs.

2/ PROGRAM OUTLINE

The development of the general action plan has been preceded by extensive surveys of existing operations throughout North America and a number of feasibility studies to determine the possible scope of operations in Ontario. Specific studies included:

- opportunities for shared-ride taxi;
- opportunities for car and vanpooling;
- preliminary investigations of the scope for priority treatment of high-occupancy vehicles on provincial freeway ramps and lanes.

The second phase of the work now underway includes a number of car and vanpool pilot demonstrations and more detailed studies of specific opportunities identified for shared-ride taxi, priority lanes and ramps, and peripheral parking lots to serve both park and ride customers and car-pools. These demonstrations and studies will lead to the final implementation phase. Depending on the success of the demonstrations and the results of the more detailed studies, the implementation could lead to paratransit supplementing or even performing the role of some existing municipal transit and commuter transit services. Eventually, this could result in the implementation of transit brokerage systems in major urban areas such as Toronto.

3/ SHARED-RIDE TAXI

The "Opportunities Study" for shared-ride taxi [1] examined the legal situation and the types of options which might provide for more economical service than fixed-route transit or dial-a-bus alternatives.

A review of Ontario legislation indicated that it was within the powers of local municipalities to permit or provide shared-ride taxi services, although in many cases it would be necessary to change local municipal by-laws to permit taxis to carry more than one unaffiliated passenger at one time. Such changes could result in lower fares and yet maintain a profit margin for the taxi operator, and they would require no subsidy from the municipality or the province.

Three service options were identified where, given the proper municipal transit service, share-ride taxis could operate as part of a municipal transit service, providing more economical service than fixed-route transit or dial-a-bus.

1. Shared-ride taxi or regular passenger cars can substitute for fixed-route bus services at times of low demand, such as for night time service. It is estimated that the shared-ride taxi option becomes more economical when passenger demand drops below approximately 5 to 12 passengers per scheduled bus cycle, depending on trip length and relative operating costs.

2. Shared-ride taxi can provide feeder service from a low density residential area to a transfer point on a fixed-route service at a lower cost per passenger than either dial-a-bus or fixed-route bus, provided that the average trip length is less than 5 km and ridership less than 150 trips per day. However, because the level of service provided is higher, the passenger demand would increase. It is estimated that total deficits might increase unless the average trip length is very short, under 2 km. A trade-off must be made between level of service, number of passengers, and total deficit.

3. In some instances shared-ride taxi could provide a more economic public transportation service in small urban municipalities than either dial-a-bus or fixed-route transit.

The next step in the promotion of the shared-ride taxi option will be to undertake specific feasibility studies in conjunction with interested municipalities. One such study is now underway in the municipality of Orangeville.

4/ CAR AND VANPOOLING

The Ontario Government's interest in car and vanpooling stems from several factors. There is obvious potential in this area as evidenced by the much higher vehicle occupancies experienced in the past. Public surveys indicate a high degree of support (almost 80%) for measures designed to increase pooling rates. The present road network can only accommodate marginal growth in peak hour volumes and current economic constraints and public attitudes preclude any large-scale expansion of the road network. Car and vanpooling can make a significant contribution to increasing the passenger-carrying capacity of the existing facilities. A further factor is the need to conserve petroleum energy resources, particularly in the 1980s. Studies have shown that car and vanpooling are two of the most effective measures for reducing transportation oil consumption. They will be essential elements in achieving the goals set in the Transportation Energy Management Program established by the Ministry of Transportation and Communications and the Ministry of Energy. Finally, a number of car and vanpool projects in the United States have been highly successful.

The program established at the Ministry covers all aspects of car and vanpooling. Initial background work [2] centered on experiences elsewhere, public attitudes, identification of specific opportunities, and legal and insurance barriers. Principal conclusions drawn from this work are as follows.

1. The most successful programs are employer-based. Such programs eliminate problems such as the complexity of matching employees at both trip ends and the need for common work hours. Carpool mates will also have at least one thing in common, their employer. Just as important are the more tangible benefits a committed employer can provide, such as priority parking, administration of the program, and the provision of opportunities for potential pooling partners to meet.

2. There is little or no conflict between car and vanpools and municipal transit services. Transit trips were found to be generally short, under 15 km. The proportion of carpoolers amoung auto occupants is low for short trips and increases as the trips become longer; vanpools are only economic for trips over 24 km.

The distribution of work trip lengths by mode at the Ministry's head office is shown in Figure 1. Car and vanpools generally serve peak hour trips and therefore have the potential to reduce peaking characteristics, thus benefiting public transit.

3. The benefits and impact of car and vanpooling are much greater than indicated by a simple analysis of modal split because of the longer trip lengths involved. Figure 2 shows the distribution of person work-trip travel at the Ministry's head office. The significance of trip length can be seen by comparing Figures 1 and 2. Existing car pools accounted for 39% of person trips and over 50% of total person trip distance. The 21% of trips over 32 km, the primary market for vanpools, accounts for 50% of the total person trip distance. By comparison conventional transit carries 10% of the trips and only 5% of the total person trip distance.

4. For the public who does not carpool, popular opinion is that the benefits of carpooling (low cost, less driving strain, and the societal benefits), are outweighed by the negative features such as increased travel time for picking up riders, reduced independence, personality conflicts, increased responsibility, regulation of work hours, and reduced mobility at work. There is also confusion as to the need for additional car insurance.

5. Changes in legislation were necessary to remove legal and insurance impediments to some types of car and vanpool operations, mainly those where payments are made on a cost sharing basis.

As a result of these preliminary studies, action has been taken in a number of areas to identify and remove the principal barriers to ride-sharing on a large scale.

4.1/ Legal

An amendment to the Public Vehicles Act was passed to exclude most car and vanpools of up to 12 persons from the provisions of that act. Previously, any pooling arrangement involving payment was illegal under the act if a municipal boundary was crossed. Municipalities still have the power to regulate such pools where they operate wholly within a single municipality. The Public Vehicles Act had never been applied to carpools

although there was nothing in its content to exclude them. The purpose of the amendment was primarily to clarify the situation and to legalize vanpool operations. Due to the length of trips involved, nearly all vanpools will operate across municipal boundaries.

Amendments were also passed to the Negligence and Highway Traffic Acts to remove the distinction between gratuitous and paying passengers. Previously, a gratuitous passenger had to prove gross negligence in order to collect damages from the driver of a car; now, any passenger only has to prove ordinary negligence. The amendments provide carpool passengers with greater protection and are expected to simplify legal proceedings.

4.2/ Insurance

The removal of the gratuitous passenger rule should simplify and clarify a number of insurance claims. The increased probability of claims is covered by the standard automobile policy, but it is incumbent on drivers to ensure that the amount of coverage they have is adequate. It is still necessary for drivers carrying paying passengers to obtain an endorsement to the standard auto insurance policy. The feasibility of amending the standard policy to cover all the common forms of carpool arrangement is being studied.

4.3/ Implementation Guides

The involvement and cooperation of the employer is essential to the success of car and vanpool projects. In vanpooling, the major contributions that the employer can make are vehicle acquisition and program administration. To provide the necessary guidance and information to employers, a vanpool implementation handbook [3] has been prepared together with a comprehensive vanpool reference guide [4]. A companion implementation handbook for carpooling is also planned.

4.4/ Demonstrations

Demonstrations are necessary to obtain first-hand information, to demonstrate the advantages, to set an example to the private sector, and to obtain and measure public acceptance. With these objectives, the Ministry has embarked on a program of demonstrations beginning with a pilot carpool project at head office. Principal features of the project include the following.

1. Development of Publicity Material
   - advance flyers;
   - articles in Ministry newspaper;
   - posters;
   - promotional material to accompany survey cards;
   - neighbourhood lists.

2. Development of Computer Matching Program

3. Obtaining Management Commitment by
   - reserving parking areas for poolers;
   - allowing time to attend neighbourhood meetings;
   - sending a letter to employees from the Deputy Minister.

4. Personal Approach
   - avoidance of computer jargon on matching lists (Figure 3);
   - personal benefits such as cost savings, reduced driving strain, and reserved parking stressed in publicity material;
   - get-acquainted meetings organized in cafeteria;
   - humourous approach in publicity material;
   - discussion groups used to develop publicity and general approach.

5. Simplicity for Participants
   - fill out card and drop in office mail;
   - grid co-ordinates of home address coded by project staff;
   - neighbourhood meetings for each contact;
   - no requirement to register carpools

6. Flexibility Stressed
   - need not pool regularly;
   - back-up arrangements for regular commuting mode;
   - new lists supplied by route or covering larger area if original list inadequate

The results of the demonstration have been encouraging. Of the 2300 employees at the Ministry, more than 1100 have returned survey cards expressing interest in being matched. The cumulative distribution of requests for matching is shown in Figure 4. Only 42% of those invited

attended their neighbourhood meetings, but 70% of those who did attend indicated that they were able to meet people on their lists. Among all employees, 68% expressed a preference for contacting people at meetings rather than by telephone. Surveys showed that 6.5% of employees joined pools which are still operating as a result of the programme and a further 7.8% made back-up arrangements. A total of 30% of the respondents found the program personally worthwhile.

One obstacle which may have lowered the success rate is the introduction of flexible and staggered working hours, since 72% of survey respondents claimed that it was more difficult to form carpools as a result of these. Also, the perception of true automobile operating costs is a problem since the average cost reported was 4.2 ¢/km, little more than the cost of gasoline.

The reserved parking was supported by 75% of survey respondents, and the only complaints received have been due to a shortage of parking spaces in the reserved area, and the perception that non-poolers were using them. This was due in part to the fact that many drivers drop their passengers off before parking and then have no means of being identified as poolers.

4.5/ Future Plans

It is expected that the Ministry carpool project will be expanded to include vanpools in the fall. Initial implementation is planned with three vans and it is estimated that there will eventually be demand for about ten.

A larger scale demonstration involving both car and vanpooling is planned for implementation with a selected number of large employers in Metropolitan Toronto. The project will be a joint venture funded in part by the Ontario Ministry of Energy and the Federal Government. Part of the Federal contribution will be financial guarantees against the risk of a pool failing and no other pool being available to use the vehicle. Removing this risk from the employer is important psychologically but experience in the United States indicates that there is little likelihood of any claims actually being made against the guarantee.

Other studies are being carried out to assess the costs and benefits of ridesharing more fully and to determine the level and type of government support which is most appropriate.

5/ PRIORITY TREATMENT OF HIGH OCCUPANCY VEHICLES

An effective means of increasing vehicle occupancies has been shown to be provided by priority treatment of high occupancy vehicles (both transit vehicles and ridesharing pools). This can be done in many ways including:

- reserved lanes and ramps;
- priority treatment at metered ramps;
- exemption of turning restrictions;
- reserved parking lots;
- preferential parking and toll rates.

The Provincial Government does not have jurisdiction over municipal parking lots, and there are currently no toll roads or bridges near urban areas in Ontario. Initial studies have been directed at evaluating the potential for priority treatment of high-occupancy vehicles on provincial freeways.

One provincial freeway, the Queen Elizabeth Way, is currently the subject of a freeway surveillance and traffic management demonstration project involving ramp metering. Preliminary investigations [5] indicate that there may be substantial benefits in constructing by-pass lanes for high-occupancy vehicles at one or more of these ramps. More detailed studies have been recommended with a view to implementing a pilot demonstration at one ramp.

Preliminary investigations have shown that the present vehicle occupancy distributions on several provincial freeways are compatible with a reserved lane operation; however, experience in the United States has shown that the success of such lanes is dependent on having the full support and backing not only of all the agencies involved but also of the general public. A much more detailed evaluation of the operation, the benefits, and public opinion is therefore necessary before implementation of such operations can be considered.

6/ PERIPHERAL PARKING LOTS

One obvious role for paratransit is to provide service to outlying residential communities surrounding major urban areas such as Toronto. A logical step in encouraging the formation of these services is the creation of parking lots around the periphery of the city adjacent to major transportation facilities. Such parking lots can be used for three purposes:

1. as "Park and Ride" or "Kiss and Ride" lots for conventional fixed-route transit services;
2. as meeting places for ridesharing participants to reduce the pick-up and drop-off times involved;
3. as a focal point for shared-ride taxi or other paratransit feeder services from nearby communities.

Many such lots have come into use of their own accord due to drivers parking on empty land at major highway interchanges. A study of such areas is being carried out to determine the feasibility of upgrading them and encouraging their use. Proposals have been made to retain surplus lands along major highways for this purpose in the future.

7/ SUMMARY

Current fiscal, environmental, and energy constraints have led to the search for alternatives to complement the continued construction of highways and conventional transit. Many and various options in the field of paratransit have not been fully exploited and may be economically and socially attractive. Therefore, a comprehensive and co-ordinated actions plan coupled with a substantial effort is necessary in order to realize the maximum benefits.

The success of these operations will depend to a very high degree on public understanding and acceptance, particularly in the areas of ride-sharing and priority treatments. Accordingly, the plan should be flexible and capable of modification to take public reaction into account, as well as the levels of success achieved. The program outlined has been designed to bring about the staged introduction of the many different features of paratransit in such a way that they will be able to reinforce and build on each other over time.

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[2] Carpooling Opportunities in Ontario, Systems Research and Development Branch, Research and Development Division, Ministry of Transportation and Communications, Ontario, March 1977.

[3] Vanpool Implementation Handbook, Systems Research and Development Branch, Research and Development Divison, Ministry of Transportation and Communications, Ontario. To be released shortly.

[4] Vanpool Program Reference Guide, Systems Research and Development Branch, Research and Development Division, Ministry of Transportation and Communications, Ontario, March 1978.

[5] Hajek, J.J., Priority Ramp Evaluation Study, Systems Research and Development Branch, Research and Development Division, Ministry of Transportation and Communications, Ontario, March 1978.

Figure 1, Work Trip Length and Mode Distribution at MTC in Downsview.

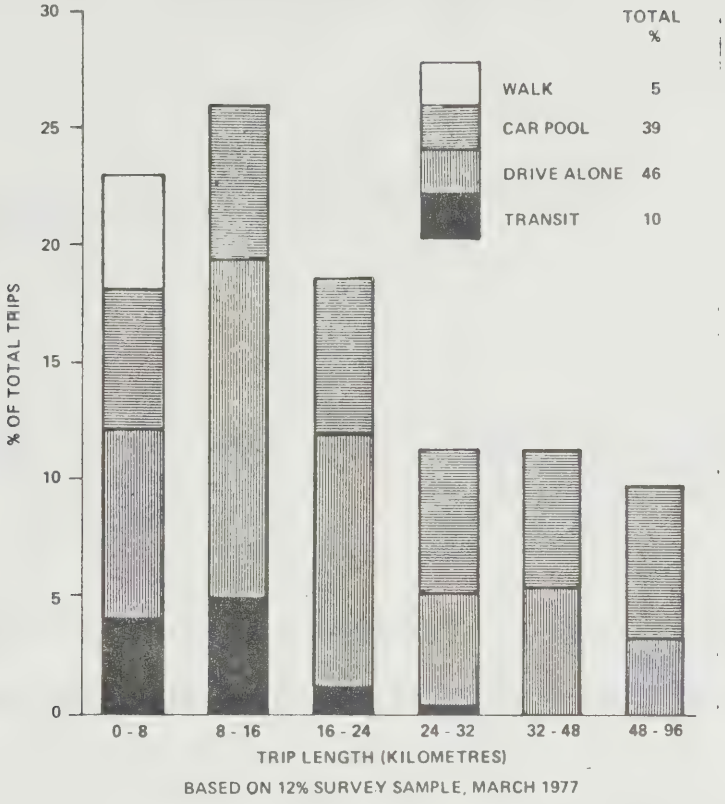
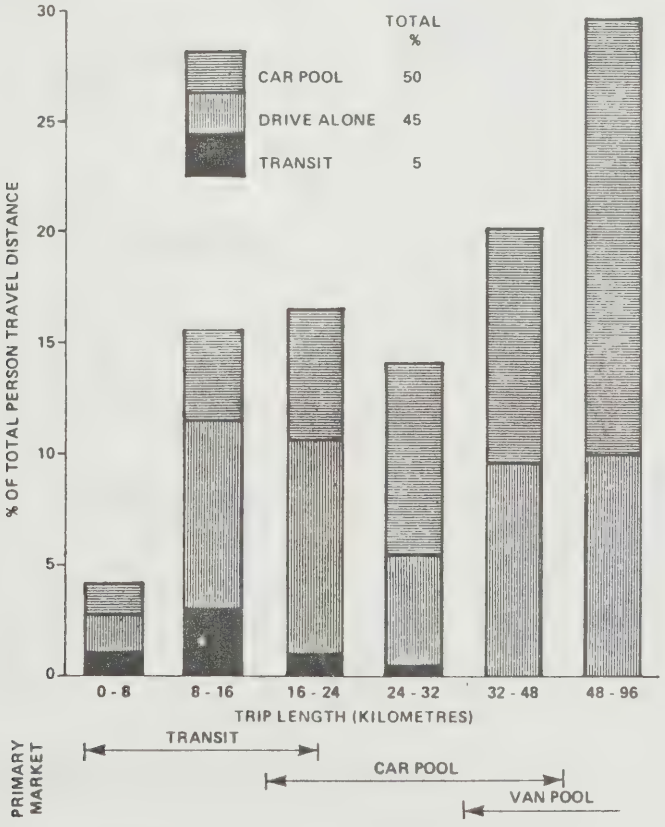


Figure 2, Distribution of Total Person Work Trip Travel at MTC in Downsview



YOUR NEIGHBOURHOOD LIST

SHARE-A-RIDE
248-7272

FEB 16,1978

JOHN DOE
SYS RES & DEV - HUMAN SOCIAL & ECONOMIC DEV
CENTRAL BUILDING - 3RD FLOOR
PHONE: 248-7191

25 THREE COURT
AT KINGSLAKE
NEAR FINCH-KINGSLAKE
WILLOWDALE M2J3A8
HOME:
AT WORK 8:30 AM TO 5:00 PM

INTERESTED IN POOLING REGULARLY
PREFERS TO SHARE THE DRIVING
CURRENTLY DRIVES ALONE
NON SMOKER

****

PEOPLE BELOW ARE LISTED BY DISTANCE FROM YOUR HOME

** **

YVONNE JONES
ON BARONESS CRESCENT AT KINGSLAKE
NEAR FINCH AND WOODBINE
WILLOWDALE M2J3K5
HOME: 494-8065 OFFICE: 248-3711
AT WORK 8:15 AM TO 4:30 PM

LIVES TO THE NORTH EAST
WITHIN 1 KM (0.6 MI) OF YOUR HOME
WOULD SHARE IN EMERGENCY SITUATION
PREFERS TO SHARE THE DRIVING
CURRENTLY DRIVES ALONE
NON SMOKER

** **

FRED BLACK
ON HOUSTON CRESCENT AT VAN HORNE
NEAR DONMILLS/VAN HORNE
WILLOWDALE M2J3H8
HOME: 491-3308 OFFICE: 248-3727
AT WORK 8:15 AM TO 4:30 PM

LIVES TO THE SOUTH
WITHIN 1 KM (0.6 MI) OF YOUR HOME
INTERESTED IN POOLING REGULARLY
PREFERS TO SHARE THE DRIVING
CURRENTLY POOLS WITH OTHERS
NON SMOKER

** **

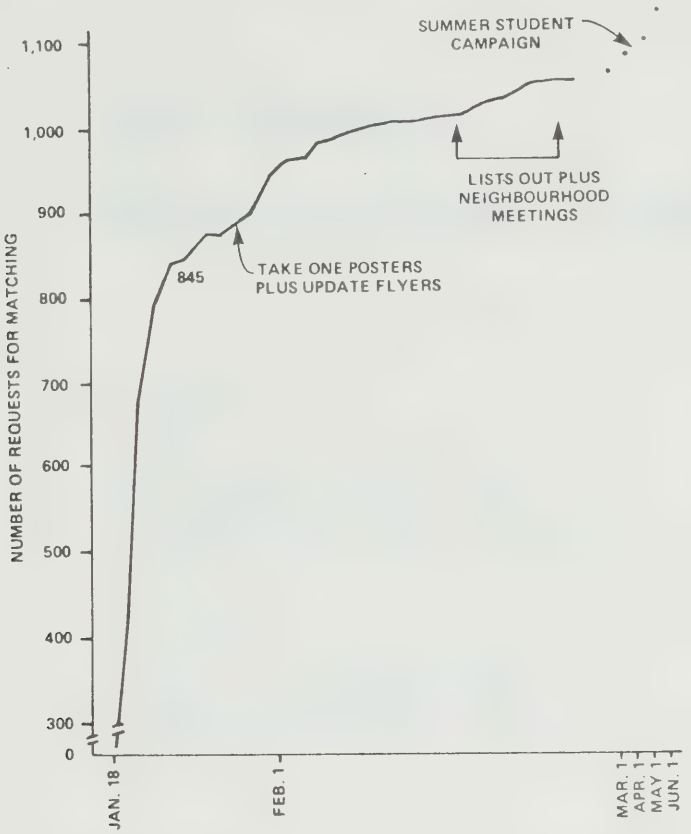
ANN SMITH
ON SENECA HILL DR AT DON MILLS
NEAR DON MILLS & FINCH E
WILLOWDALE M2J4S7
HOME: 497-3647 OFFICE: 248-7121
AT WORK 8:15 AM TO 4:30 PM

LIVES TO THE WEST
WITHIN 2 KM (1.2 MI) OF YOUR HOME
WOULD SHARE IN EMERGENCY SITUATION
PREFERS TO BE THE DRIVER
CURRENTLY POOLS WITH OTHERS
PREFERS TO SMOKE WHILE COMMUTING

** **

FIGURE 3: Example of computer matching output.

Figure 4, Cumulative Curve Showing Number of Requests for Matching as a Function of Time



The Ontario Share-A-Ride Program

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ABSTRACT

The Ontario Share-A-Ride program is designed to achieve widespread use of car and vanpooling across the Province of Ontario. The paper describes the three phases of the program: study; demonstration; and broadscale implementation. A number of preliminary results are presented from the car and vanpool demonstrations being carried out at the head office of the Ministry of Transportation and Communications. These results show a 10% to 20% increase in pooling activity and substantial cost savings for the participants in the vanpool program.

A cost comparison is made between the total costs of operating carpools and vanpools and of providing bus service. Buses are shown to be four times, and the average car five times, as expensive as a vanpool. The data is used to perform a benefit analysis for creating new car and vanpools and to calculate benefit/cost ratios for the ongoing pilot projects at the Ministry. Potential community and social benefits from the creation of each new car and vanpool are shown to total $600 and $3000 a year, respectively. Including personal benefits and subtracting time costs brings the total benefits per pool to approximately $2500 and $7000, respectively, with individual cost savings of $1000 to $1300 per year per person.

The future program will consist of a broadscale outreach effort across the province in which technical advice and guidance will be provided from the experience gained in the demonstrations. In addition, implementation handbooks and publicity material have been developed for large scale distribution, and other incentive measures to promote high occupancy vehicle use are being studied. The program goal is to create 400 vanpools and 5000 new carpools in the province by 1983.

CONTENTS, Part 2

LIST OF TABLES

1/ INTRODUCTION

The Ontario Share-A-Ride Program is a comprehensive ride-sharing project involving the promotion of both car and vanpooling. The primary goal is to reverse the downward trend in vehicle occupancy which has seen the average number of persons in a car in Toronto during peak hours decline by 28% since 1950. Rising construction costs, land values, and public rejection of urban freeway projects have caused many governments to look for ways of making more efficient use of existing transportation facilities as an alternative to large scale construction of new facilities. This, together with the need to conserve scarce petroleum resources, caused the Ontario Ministry of Transportation and Communications (MTC) to embark on the Share-A-Ride Program in mid 1977.

Added impetus to the program has been provided by increasing concern over Canada's dependence on foreign oil supplies and the effect on Ontario's economy of the rapidly rising cost of oil. The program is now partly funded by the Ontario Ministry of Energy as part of a provincial Transportation Energy Management Program. The federal Department of Mines, Energy and Resources and Transport Canada are also participating in some elements of the program as part of a joint federal/provincial demonstration project to promote vanpooling across Canada.

A major initial concern was that the promotion of ride-sharing would have a detrimental effect on public transit services, but it would appear that the two are in fact complementary. Vanpooling, and to a lesser extent carpooling, are generally only practical and economic for those travelling above average distances to work during the peak hour. Trips on local transit services are usually short, 4 to 6 km, and much of the cost of municipal transit service is associated with providing high capacity in the peak hour which is not used in the off-peak. The promotion of ride-sharing options can assist transit by :

- removing pressure to provide uneconomical peak hour services to outlying communities;
- reducing peak hour demand;
- increasing the dependence of poolers on transit in the off-peak because they no longer have cars available;
- reducing peak hour traffic congestion.

2/ THE PROGRAM

The program is being carried out in three phases of which the first, study phase, is complete, the second, demonstration phase, underway, and the third, broadscale implementation, just beginning.

2.1/ Study Phase

The study phase involved gathering information on the success and organizational structure of other programs, identifying specific opportunities for ride-sharing promotion in Ontario [1], the removal where possible of legal and institutional barriers, and the study design for demonstrations [2, 3]. A major step was the passing of an amendment to the Public Vehicles Act excluding carpools and most vanpools from the provision of that act. Municipalities still have the power to regulate most types of vanpool operation if pick-ups are made within the same municipality as the destination. This is not likely to happen very often due to the length of the typical vanpool trip, and there is no record of any municipality having attempted to restrict carpool operation. Tax and insurance laws and regulations in Ontario do not create any serious obstacles to car or vanpool operations.

Information from projects where preferential treatment was given to high occupancy vehicles in the form of reserved freeway lanes or entrance ramps showed that substantial benefits could be gained from such treatment, but only in the right situation. It was concluded that very careful studies would need to be carried out together with a public education program before any such priority treatment should be considered for implementation.

2.2/ Demonstration Phase

The demonstrations were designed to permit the development of the materials necessary for large scale implementation including: implementation handbooks; publicity and presentation material; and a computer matching program which supplies persons interested in carpooling with lists of others who are also interested, live in the same area, and have similar hours of work. They enable MTC staff to gain first-hand experience in both the promotion and implementation of a ride-sharing program while at

the same time providing an example to be followed by others. The demonstrations were carried out at both the MTC head offices in Downsview and in the private sector as a part of the federal/provincial demonstration program.

The MTC demonstration started with carpool promotion and computer matching in February 1978. A two stage approach was adopted in the advance publicity. The first stage sought general support for the program and the carpooling concept, mainly on the grounds of community and social benefits. The second stage concentrated on the benefits to each individual as reasons to participate. A major objective was to make participation as easy and appealing as possible, avoiding the use of computer jargon in the computer match list, having approachable project staff, and adopting a step by step approach to signing up without any obligations. Employees were encouraged to sign up and obtain lists of other employees living close to them, even if they only wished to pool occasionally or to have a backup arrangement for their regular means of commuting. Those requesting matching lists were invited to attend a meeting with other employees living in the same neighbourhood so as to have a chance to meet them on an informal basis without having to make a commitment to pool together. Sections of the parking lots closest to the MTC office buildings were reserved for carpools as an added incentive to pool.

After the initial implementation, an ongoing program was established to handle new requests due to changes in office location, hours of work, home address, or hiring of new employees. After one year's operation, participants were asked to verify or change the data they supplied in the original sign up and new match lists were sent to all participants.

In April 1979, the MTC demonstration was expanded to include the operation of three vans. The vans are leased by MTC and special approval was obtained from Management Board of Cabinet to permit their use for transporting employees to and from work on a full cost recovery basis. No other private use of the vans is permitted.

In the private sector, a demonstration area was selected in consultation with the Toronto Transit Commission and the Metropolitan Toronto Planning Department. A presentation was made to representatives of all the major

companies in the selected area. Follow up discussions have resulted in Bell Canada plans for a three van pilot starting in the fall of 1979. The Ryerson Polytechnical Institute is planning to implement carpool matching for 1000 staff and faculty in September 1979.

2.3/ Broadscale Implementation Phase

Discussions are proceeding with other companies in the selected demonstration area at the same time as contact is being made with companies in other parts of the province. The experience gained in the initial demonstrations has been used to develop an appropriate approach strategy and presentation materials. Implementation handbooks [4, 5] to assist companies have been developed for both van and carpooling. The intention is to achieve staged expansion building on the success of the initial demonstrations, in preference to an all out massive effort at the beginning which might create unreasonable expectations and lose momentum after the initial push.

3/ RESULTS

3.1/ MTC Carpool Demonstration

An initial survey carried out before the demonstration showed that 84% of employees were in favour of measures aimed at promoting carpools. The survey cards, which had to be filled out for the computer matching, were distributed to all 2300 employees in the complex and were completed and returned by 67%. Forty-nine percent (1118 employees) requested computer match lists. Some did not request matching because they were already in a satisfactory carpool and were not interested in making any change.

Of those requesting matching, less than 2% could not be matched with at least one other person living within 10 km of their home and interested in pooling. In 86% of the cases, the first match lived within 1 km and 68% obtained 15 matches within 10 km or less.

Car occupancy counts and a telephone survey was carried out to assess the impact of the program on the formation of carpools. One year after introduction of the program approximately 35% of employees were carpooling, up about 2% from before the program. However, the carpool program coincided with the introduction of a mixed system of staggered and flexible hours in many offices in the Ministry. The results of the telephone survey and individual contact with employees revealed many conflicts in hours between those on a very flexible arrangement permitting nine workdays in a two week period, those on staggered hours who have to work the same hours every day, and those on fixed hours set by their office. It is difficult to assess the precise effect of these conflicts but a rough estimate was made that the effect of the carpool program on its own would have been to increase the proportion of employees carpooling by 3 to 6%, an increase of 10 to 20% in pooling activity.

The impact on auto distance travelled was slightly greater for two reasons. There was evidence of some switching between existing pools making them more efficient, and the average distance travelled in carpools was considerably above the average for all employees.
Table 1 shows results obtained from a telephone survey taken five months after implementation.

Table 1/ Mean Distance MTC Employees Commute to Work

	km	% of TRIPS	% OF TOTAL DISTANCE
All Carpoolers	28.5	36	52
Old Pools (over 5 months)	20.6	27	42
New Pools (under 5 months)	22.2	9	10
Solo drivers	17.5	47	42
Transit Riders	9.0	12.5	6
Walk/Cycle	-	4.5	-
	19.5	100.0	100

Estimated savings due to the program amount to 60 parking spaces, 675 000 vehicle-kilometres and 117 000 L of gasoline a year.

The ongoing program handles 15 to 20 new requests for matching each month and experienced a sharp increase to 25 in one week during a local transit strike. The update after one year resulted in changes to the matching information supplied by 265 participants (26%) plus 23 new additions and 21 deletions.

3.2/ MTC Vanpools

The three vans leased by the MTC for the demonstration started operating on April 2, 1979. The fares were set on the basis that the vans would break even at the end of four years operation with an average of ten paying passengers each. The initial response was slower than expected, and it took six months to reach the breakeven point of ten paying passengers each. Possible explanations for the slow response include the success of the carpool demonstration, loss of interest caused by delays in obtaining the vans, and start up of the operation just before the summer vacation period.

In the first six months of operation, costs were $1096 (11%) and revenue $2422 (29%) less than the projected figures for the breakeven operation, resulting in an unplanned deficit of $1326 (14% of actual cost). In the second six months, costs were $468 (5%) and revenue $365 (4%) less than projected, producing a net reduction in the unplanned deficit to

$1224 (7% of actual cost). This is expected to be recovered in the remaining three years of operation without any major adjustment of fares other than to cover the increases due to inflation.

Table 2/ Travel Data for MTC Vanpool Participants

Mean Distance to Work	50 km
Mean Vanpool Fare	$10.60/week
Previous Mode	
Drove Alone	16
Car Passenger	3
Shared Driving	10
Public Transit	1
Mean Car Occupancy in Previous Mode	1.9
Mean Reduction in Annual Driving	13 000 km/passenger
Mean Cost Saving	$ 8.40/week
Mean Increase in Travel Time	17 min one way

In addition to the above savings, 43% expected to be able to dispose of or avoid the purchase of a car as a result of the program and all expected to continue vanpooling. Savings of up to $180/yr were reported on car insurance. Eighty percent of the riders claimed to have public transit service available, but all claimed that it was not a practical alternative for their trip to work.

Participants were asked to select a maximum of five attributes each that they liked or disliked about vanpooling from lists of 18 and 12 different factors, respectively. The frequency each factor was chosen is shown in Table 3. On average, twice as many likes were chosen as dislikes. Cost saving and not having to drive were selected as likes by more than half the respondents. Although the most common dislikes were the loss of flexibility to come and go as one pleased; and to make stops en route, for shopping, etc.; a significant number also found the enforced regularity of hours to be to their liking.

Table 3/ Likes and Dislikes About Vanpooling

LIKES		DISLIKES	
Factor	Frequency Selected	Factor	Frequency Selected
1. Saving Money	21	Ability to leave anytime	16
2. Not having to drive	17	Ability to make stops en route	9
3. Reliability of service	14	Extra time	8
4. Leaving car at home for another family member	13	Had to change work hours	6
5. Conserving gas	13	No transport at lunch time	6
6. Regular arrival and departure time	12	Having to meet van	6
7. Ability to sleep	11	No car for business use	5
8. Ability to read or work	9	Comfort	3
9. Door to door service	8	Too expensive	2
10. Able to sell car	2	Problems with other passengers	1
11. Encourage better time management	2	Not enough privacy	1
12. Convenience	2	Safety	1
13. No car available	1		
14. Comfort	1		
15. Develop new friendships	1		
16. Preferred parking	1		
17. Safety	0		
18. Unable to drive	0		

3.3/ Private Sector Demonstrations

The demonstrations in the private sector have not yet progressed to the point where any quantitative data is available.

4/ BENEFIT ANALYSIS

4.1/ Cost of Alternative Modes

The cost data in this table has been derived from Reference 6 by applying a factor of 1.36 to account for inflation between 1975 and 1979. The resulting figures for automobiles give a 28% higher fixed cost for owning a car than shown by the Canadian Automobile Association [7], but the operating costs are 29% lower. The differences from the C.A.A. figures may be attributed to the fact that the latter are based on a new car in its first year of ownership and not a fleet average. Figures for vans were derived by applying appropriate factors to the auto figures based on program experience, and are consistent with MTC's projected costs of operation. Energy conservation has been extracted as a separate benefit to which a dollar value is not assigned.

Table 4 compares the cost of travel by alternative modes. The cost of automobile travel is based on a fairly high annual usage to be representative of a long commute to work for which all three options might be considered. The average per person cost in a vanpool is less than 15% of that of driving alone when the fixed costs of ownership are included. While the bus is 43% less expensive than driving alone, it is still four times as expensive as the vanpool. The low occupancy of the bus is a result of using an average figure for peak and off-peak usage. Long distance commuter runs usually experience a high occupancy factor, but any per passenger cost saving is offset by the inability to use such buses in the off-peak and the general need to pay the operator for a minimum number of work hours. Also, while the average total cost of providing bus service is higher than the cost of carpools or vanpools, buses are required to provide service to those who are unable to use other modes. If a certain minimum acceptable level of service has to be provided with surplus capacity in the peak period, then the marginal cost of carrying additional passengers will be extremely low.

Table 4/ Cost of Travel by Mode

	AUTO (COMPACT)	BUS	VAN
Annual distance	32 000 km	-	32 000 km
Mean occupancy	1.0	16.5	10
Annual parking cost	$490	-	$490
Other fixed costs	$1 632	-	$2 520
Fuel consumption (Person km/L)	6.4	29.3	46.1
		¢/veh km	
Fixed cost (From above)	6.6*	55.8**	9.4
Maintenance and operation***	6.1	27.0	8.9
Operator	-	67.6	-
Cost to user	12.7	90.3****	18.3
Roadway	3.5	9.1	4.2
Fuel tax credit	(1.5)	(5.1)	(2.1)
Accidents	1.0	negligible	0.6
Peak hour congestion	0.9	2.1	1.1
Community & social cost	3.9	66.3****	3.8
TOTAL	16.6	156.6	22.1
Per Person	16.6	9.5	2.2

* Includes depreciation, interest, insurance, and licence.

** Includes cost of garage and maintenance facilities in addition to capital amortization of vehicle cost.

*** Includes gas, oil, maintenance, and repairs.

**** Assumes a 40% public subsidy of capital and operating costs.

4.2/ Annual Benefits from New Pools

Table 5 shows the total annual benefits of taking a solo car driver and placing him in each of the three alternative modes for his daily trip to work. These benefits have been calculated from the costs shown in Table 4 assuming a 24 km trip each way 230 d/yr. The benefits are per person for former solo drivers and need to be multiplied by the mean occupancy shown to obtain the total benefit for forming each new pool. In practice, the benefit of creating new vanpools will be considerably less than that for putting ten single occupant car drivers into one pool since the make-up of the pool is sure to include some former carpoolers and transit riders. Table 6 shows the annual benefits of creating typical car and vanpools and the projected benefits of the existing MTC vanpools. In fact, the cost savings to the MTC vanpoolers were completely offset by the additional travel time costs, suggesting that they either valued the time spent in the van at a lower cost than that used, or that the other benefits from riding, such as not having to drive, were of significant value. The cost of the ongoing carpool program at MTC is estimated at $7000/yr and administration of the vanpool operation at about $4000/yr. Counting community and social benefits only, this gives a benefit to cost ratio of 3.6 for the ongoing carpool program, assuming present levels of carpooling are maintained, and of 3.7 for the vanpool program. Assuming a benefit of 18¢ for each litre of gasoline saved, representing the reduction in the national trade deficit, the benefit to cost ratios increase to 5.7 and 5.6 for the MTC carpool and vanpool programs, respectively. Including personal benefit increases the ratio for the carpool program to 14.7 but has negligible effects on the vanpool benefits. Including the initial set-up costs would reduce these ratios but not substantially if they are spread over the duration of a long-term project.

Table 5/ Annual Benefit Per Person of Changing Mode from Drive Alone

New mode	CARPOOLS	BUS	VANPOOLS
Mean occupancy (persons/veh) (1)	2.5	16.5	10
Increase travel time/trip (1)	5 min	20 min	10 min
Gasoline saving	1040 L	1350 L	1490 L
Community and social benefit (2)	$ 260	$ 180	$ 390
Personal benefit (3)	$1020	$1100	$1300
Time cost @ $4/h	$ 150	$ 600	$ 300
NET Benefit (4)	$1130	$ 680	$1390

One way trip length assumed 24 km; trips made 230 d/yr.

(1) Assumed data.

(2) Roadway, congestion, and accident cost less fuel base credit. Bus includes cost of public subsidy.

(3) Included fixed costs of ownership of one in three cars not required to commute by the new mode on the assumption that the proportion will be disposed of.

(4) Exludes any benefit due to energy conservation.

Table 6/ Total Annual Benefits of New Pool

	TYPICAL CARPOOL	TYPICAL VANPOOL	MTC VANPOOL
Mean previous trip length	24 km	32 km	50 km
Trip length of pool vehicle	28 km	40 km	60 km
Mean occupancy	2.5	10	10.3
Previous modal split car/bus	85/15	95/5	97/3
Average increase in travel time	5 min	10 min	17 min
Gasoline saving	2 000 L	12 500 L	14 000 L
Community and social benefit (2)	$ 630	$3060	$4910 (3)
Personal cost saving (4)	$2100	$7510	$5770
Time cost @ $4/h	$ 160	$3330	$5840
NET Benefit	$2570	$7240	$4840

(1) The pools are assumed to operate 250 d/yr, not necessarily with the same occupants each day.

(2) Includes roadway congestion, accident, and transit subsidy cost less fuel tax credit.

(3) Includes cost of providing free parking at $145/space/year for the vehicles replaced.

(4) Includes 33% of ownership costs of the average reduction in number of cars used for commuting on any one day.

5/ FUTURE PROGRAM

It is intended that the contacts being made with companies be extended to include all the large employers in Ontario in the third phase broadscale outreach effort. The carpool and vanpool implementation handbooks are available for distribution to companies and will be updated as further experience is gained. MTC staff and consultants will be available to make presentations to interested companies and to provide technical assistance in the implementation of car and vanpool programs. A variety of promotional material is also available for distribution to employees. The feasibility of providing lease and loan guarantees for the acquisition of vans is being studied. Assistance with computer matching of carpool participants can be provided. Also improvements are being made to the computer program including direct matching from postal codes. Studies are planned to evaluate the scope for promoting peripheral parking areas around urban areas as meeting places for car and vanpools. Priority treatment of high occupancy vehicles on freeway lanes and entrance ramps will also be evaluated in more detail for several specific sites.

One of the present objectives is to establish vanpools as an accepted mode of commuting on a significant scale, and then to investigate the potential for further innovations bridging the gap between vanpools and other paratransit options such as jitneys and dial-a-bus.

The projected cost of the program is $120 000 to $400 000 a year for the next four years. Tentative goals have been set for the creation of 400 vanpools and 5000 new carpools in Ontario by the year 1983. The potential savings from achieving this goal would be 15 million litres of gasoline a year. Other community and social benefits would total $4.4 million a year and personal cost savings $13.5 million a year.

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Development of an Integrated Ride Sharing Program to Conserve Energy and Prepare for Energy Shortfalls

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ABSTRACT

The paper outlines the development, implementation, and preliminary results of the Ontario Share-A-Ride program. Previous papers describe the study and pilot demonstration phases of the program. The emphasis is now towards province-wide applications to conserve energy and help place the province in a state of preparedness to deal with possible energy shortfalls.

The implementation program consists of a comprehensive action plan in which the primary goal is to encourage major employers to set up vanpool operations and ride-matching services to aid the formation of carpools. General information to the public is directed at making them aware of the benefits of car and vanpooling. Additional incentives to rideshare are provided through the provision of third party vanpool services and commuter parking lots to serve as meeting points. Other measures to provide preferential treatment to high occupancy vehicles are being studied.

There are three distinct aspects to the promotion and marketing directed at local governments, large employers, and the public, respectively. Each is described in more detail together with the co-ordination with other aspects of the program. To date, 13 municipalities have become involved with the ridesharing program, 5 have appointed co-ordinators, and 3 have established ridesharing programs for their own employees. Of the 250 employers identified as prime candidates for ride sharing programs, approximately half have received information on car and vanpooling. It is now expected that there will be about 15 employer-based vanpool programs operating about 170 vans in Ontario by the end of 1980.

Initial results show a positive response in all sectors, including local government, industry, public, and the media. It appears likely that the original target set will be met or exceeded, resulting in substantial energy savings and the ability to respond more readily to energy shortages should they occur.

CONTENTS, Part 3

1/ INTRODUCTION

The Ontario Share-A-Ride program is now in its third phase directed at broadscale implemenation of car and vanpool programs across the province. Phase 1 involved the study of existing programs in the United States and an assessment of the opportunities for similar measures to be implemented in Ontario. Special attention was given to the legal and regulative aspects of ridesharing, and this led to an amendment to the Public Vehicles Act effectively deregulating most car and vanpools which operate across municipal boundaries. The results of this study phase are contained in a report [1] and a previous RTAC paper [2].

Phase II consisted of a pilot demonstration of both a computer matching service for carpools and a vanpool operation at the Ministry of Transportation and Communications head office in Downsview. The matching service involved having each employee complete a survey card with information on home address, phone numbers, hours of work, interest in ridesharing and preference for driving or riding, smoking, etc. The computer program matches employees by home address and hours of work, supplying each employee with a list usually containing 15 names of other employees interested in ridesharing and living in the same neighbourhood. As an added incentive, those who carpool are given preferred parking locations close to the buildings in which they work.

For the vanpool demonstration the Ministry leased three twelve-passenger vans which were provided to groups of 10 to 12 employees living 40 to 65 km from the Ministry for their daily commute to work. The fares paid by the employees, ranging from $9.00 to $12.00 a week, covered the full cost of leasing, insuring, and operating the vans. Each van had one primary driver and two backups. The primary drivers also acted as co-ordinators for the pools and were responsible for the maintenance and operation of the vans, in return for which they got to ride for free.

Preliminary results from the two demonstrations have been reported in a previous RTAC paper [3]. At the present time, about 35% of all employees are pooling and the three vans are operating close to capacity. It is estimated that the two programs together save one million vehicle kilometres of travel and 180 000 L of gasoline a year, plus 75 parking spaces at the Ministry. Carpool matching services are in the process of being

implemented at four regional offices of MTC, and a proposal is being prepared for a ridesharing office to serve all provincial government offices in the downtown area of Metropolitan Toronto. Ten vans are on order for expansion of the vanpool operation to include other ministries.

In the third phase of the program the experience gained in the demonstrations, and knowledge acquired, are being used to encourage major employers across the province to establish similar programs.

2/ RECENT U.S. EXPERIENCE

Gasoline shortages in some states and rapid increases in the price of gasoline have provided added impetus to ridesharing programs throughout the United States. Vanpooling has continued its exponential growth rate and by April of 1980 there were 350 employer-based programs operating some 10 000 vans. One projection [4], based on an extrapolation of present growth rates, estimated that there may be as many as one million vanpools in operation in the U.S. by 1990. Operation on that scale would account for 10% of all commuter trips and 20 to 25% of commuter travel across the nation. Even with a substantial leveling off of the growth rates, it would appear likely that vanpools will become a significant mode of travel and could easily rank on a par with bus and rail transit in importance as a means of conserving energy. Government agencies in at least 33 states, including all the heavily populated industrialized ones, are now actively involved in the promotion of vanpooling.

The effect of gasoline shortages and price increases on carpool formation is apparent at the Commuter Corporation in Los Angeles. This is a non-profit corporation established in 1974 with one of its functions to be the provision of an area wide carpool matching service. In the three years up to December 1977 approximately 90 000 people signed up for the service. In the first six months of 1979 alone 125 000 people signed up.

3/ PROGRAM DEVELOPMENT

The primary emphasis in the implementation program is to encourage major employers to establish their own car and vanpool programs. Experience to date has shown these to be the most effective. In vanpooling, the employer removes a major risk element from the participants by acquiring and making available the vans. The capital cost of the van and the possibility of a pool failing is a significant deterent to an individual. The risk to the employer is much lower since the van can always be assigned to another route or used for other purposes. The employer will usually be able to readily incorporate the necessary administrative procedures into his normal operations, and because of the proven benefits such as reduced parking demand, improved employee relations, reduced absenteeism, expanded labour market, and improved corporate image, most are willing to absorb the administrative cost. Many pass on some of the savings by subsidizing financing or operating costs. In addition, the number of variables involved in matching the riders for both car and vanpools usually make it impractical unless they have some factors in common to begin with. Employer-based programs ensure that they have a common destination and probably similar hours of work.

As a first step to aiding companies to establish their own programs, implementation handbooks were produced for both vanpooling [5] and carpooling [6] based on the experience gained in setting up the demonstrations at MTC and the previous knowledge acquired from other operations across North America.

In addition to providing information and assistance to major employers, the program is designed to increase general public awareness as to the benefits of car and vanpooling, and to provide additional positive incentive to pool where feasible. The following sections describe each element of the program in more detail.

3.1/ Municipal Outreach

Local governments have several important roles to play in promoting programs. They can act as the initiator of an integrated approach to the employers in their area; they can act as an ongoing co-ordinator of activities in their region based on their local knowledge of individual needs; and, they can set an example by establishing programs for their own employees.

In order to use staff resources as effectively as possible, it was necessary to identify those municipalities with the greatest market potential. As a first step, information was distributed as part of a general energy conservation package to the mayors and regional chairmen of the approximately 40 municipalities having public transit systems. Priorities were then developed based on:

- population;
- number of major employers;
- geographical distribution across the province;
- specific local transportation problems;
- interest expressed by the municipality.

Based on these factors, a list of 13 municipalities and regional governments was developed designating the prime candiates with which follow up contact was actively pursued by the Ministry.

Having established the appropriate lines of communication with the local government, the next step was to arrange a presentation to senior planning staff and/or council members. At these presentations, the film "Pooling Around", made by the Continental Oil company, was used as an introduction to the vanpool concept; this was followed by a slide presentation on the benefits of car and vanpooling and the implementation process. Special emphasis was placed on energy conservation and improved utilization of transportation facilities. Finally, the region or municipality was encouraged to appoint a co-ordinator and to undertake a joint program with the Ministry directed at obtaining local employer participation.

A concern in some municipalites was the relationship of a car and vanpool program to the operation of public transit. The Ontario Municipal Act gives municipalities the authority to regulate public transportation services where passengers' origins and destinations both lie inside the municipal boundary. The question of whether vanpools are considered to be a public transportation service has never been determined in a court of law. In any case, MTC and the municipalities prefer to come to a working solution acceptable to all without seeking such a resolution. Since vanpools, because of distance and economics, tend not to compete

with local bus services, most municipalities were willing to permit vanpools to operate without restriction. Concern was greater in the larger municipalites and in particular Toronto, which has commuter rail and subway lines serving longer distance trips. For this reason, it was decided that car and vanpooling would not be actively promoted in Toronto except in selected areas which were relatively deficient with respect to transit service. The following criteria were developed as guidelines to ensure that vanpools do not conflict with the services provided by the Toronto Transit Commission, and that they comply with the following general principles of vanpooling.

1. For the purpose of a test program to evaluate transit compatability, each operation will be reviewed and be acceptable to the TTC before being include in the test program.

2. The vanpools operate in transit deficient areas as determined by the duration of public transit trip or distance to public transit. Specifically, the trips served would have the following features.

   (a) They would require at least one hour to be made by public transit. The trip time by public transit to be calculated as the sum of
      (i) Walking time. The total time required to walk to the initial transit stop and to the final destination assuming an average walking speed of 270 feet/min.
      (ii) Waiting time. The sum of the headways at the initial stop and at each transfer point.
      (iii) Riding time. Scheduled service time between stops.

   (b) or, the trips would have at least one end located more than 1/4 mile from the nearest transit stop from which they can be made by public transit.

3. Each pool consists of a group of regular commuters who share the expense of commuting as a group, specifically:

   (a) subscription fees be paid by the regular riders on a periodic basis (e.g., monthly or weekly);
   (b) non-regular riders are carried on an occasional basis only and by pre-arrangement with the driver;

(c) all the riders in any one pool have a common employment location to which they commute;
(d) the driver of the van is a member of the group and does not receive regular pay for driving;
(e) no one driver makes more than one round trip per day; and,
(f) there will be no trip fare collection on the van.

4. The organizers of the pools will permit the Ministry of Transportation and Communications to survey the riders and evaluate the results.

These criteria are not incorporated into any legal document but are the basis for an informal agreement whereby the TTC will not initiate proceedings to terminate the operation of vanpools provided that the criteria are adhered to.

3.2/ Private Sector Outreach

A comprehensive information package has been developed for distribution to both local government and major employers. This package contains:

- a Vanpool Implementation Handbook;
- a Carpool Implementation Handbook;
- a general publicity brochure on vanpooling;
- a general publicity brochure on carpooling;
- a brochure on the what and why of company sponsored vanpooling;
- an employee benefit fact sheet;
- a list of contact persons in other vanpool programs;
- a description of the MTC Share-A-Ride program;
- copies of press clippings.

Contact with employers is established through one of three methods:

1. a joint invitation from MTC and local government to attend a ride sharing seminar;
2. as a result of the employers approaching MTC;
3. direct approach by MTC in locations where local government programs do not exist.

For the ridesharing seminar, all the employers with more than 300 or 400 employees located in the area were invited. The usual agenda for the seminar was:

- an introduction and welcoming speeches by local dignitaries such as the mayor and regional chairman;
- the showing of the film "Pooling Around" to introduce the vanpool concept;
- a slide presentation by Ministry staff or a consultant outlining the benefits of car and vanpooling with the major emphasis placed on the advantages to the employer and the fact tht most companies implement programs because it makes good business sense;
- a break during which demonstration vans can be inspected;
- an outline of a selected company's vanpool program by its administrator detailing the initial concerns of the company, the steps they went through in implementation and the results;
- a short summary by representatatives of the Ministry and the local planning department outlining the steps they are taking and the assistance available to local companies;
- a question and answer period with a panel which includes representatives from the Ministry, local planning department, and companies operating vanpool programs.

Employers were phoned after the invitations were sent out to encourage them to attend, and in order to prepare name tags in advance for the seminar. Registration was carried out at the start of the seminar to provide a list of followup contacts and to provide an opportunity to distribute the information packages. Press and local politicians were also invited to attend.

The assistance offered to companies, either at the seminar or through direct contact, included, in addition to the information packages and implementation handbooks, the following elements:

- individual presentations to both management and staff;
- presentation material to make their own presentation including both the film "Pooling Around", and slides and accompanying text;

- assistance in preparing an evaluation report;
- ongoing technical advice and assistance;
- publicity material for their promotional campaign, modified to meet their individual needs;
- standard forms and agreements for operating their program;
- a computer matching program for carpools and computer time to run it.

3.3/ Public Awareness

Part of the program is directed at increasing public knowledge of the benefits of carpooling and vanpooling with a view to gradually increasing public acceptance of the concepts as desirable and necessary methods of commuting. Methods used include:

- press releases on various aspects of the program;
- media coverage of events such as the employer seminars;
- distribution of publicity brochures;
- displays at energy shows and major exhibitions;
- presentations to the staff at regional offices of the Ministry and to interested parties at transportation energy seminars held around the province.

The campaign served not only to inform the public, but also as another avenue through which contact could be made with major employers interested in setting up their own programs.

3.4/ Third Party Vanpool Services

The major growth in vanpools has been due to employer-based programs; however, the total market for vanpools can be expanded by having an outside agency carry out the functions normally performed by the employer. At least 17 such agencies now exist in the United States, each serving one or more of the following situations:

1. individual pools formed privately;
2. employer programs where the employer(s) is(are) not willing to assume responsibility for running the program;
3. for a trial period for major employers wishing to establish their own programs.

Typical services provided by these agencies include:

- provision of vans;
- insurance;
- no penalty termination option;
- record keeping and fare administration service;
- back up vans.

A consultant study was carried out to evaluate the U.S. programs and identify the major issues and options for a similar program in Ontario. In May 1980, the Ontario Vanpool Organization (OVPO) was formed as a crown corporation owned by the Ministry of Energy to provide third party vanpool servies. The previous government vanpool demonstration was transferred to OVPO and an additional ten vans ordered for expansion of that demonstration on a third party basis. If successful, the program will then be expanded to include private sector employers and employees as well.

3.5/ Commuter Parking Lots

Often, the distribution of home locations makes it inconvenient to provide door to door service for all car and vanpool riders. In many cases, it may be preferable for some to drive to a central meeting point; this has been observed to cause a significant amount of unofficial parking along major highways.

As an aid to the formation of car and vanpools, and to alleviate some safety problems caused by the unofficial parking, the Ministry has undertaken a construction program to provide proper parking facilites at locations where a significant need has been demonstrated. These lots are signed as carpool parking lots, although some are also served by commuter bus services. Six lots were opened in the fall of 1979 and seven are planned to open in the summer of 1980.

In addition to the construction of new lots, a pilot program has been initiated in the Metro Toronto commutershed to identify existing parking areas which could also be used for commuter parking without interfering with present use. Candidate locations include churches, shopping plazas,

arenas, racetracks, restaurants, taverns, service stations, and parks. With the construction of new parking lots having an average cost of $1000 per space, the shared use of these other parking areas could lead to substantial cost savings.

Once negotiations with the property owners are complete and appropriate signs erected, it is anticipated that the locations of both existing parking areas and the newly constructed ones will be shown on a map used as part of a general publicity campaign to promote car and vanpooling.

3.6/ Preferential Treatment for High Occupancy Vehicles

One method by which added incentive to share-a-ride can be provided is to give high occupancy vehicles preferential treatment. Examples of such treatment which have been used elsewhere in North America include:

1. Exclusive Lanes
- Existing reverse flow lane adjacent to median on freeways;
- Existing reverse flow lane adjacent to curb on one-way arterial street;
- Existing with flow lane on freeway or arterial;
- Newly constructed with flow lanes;
- Approach lane to toll plaza;
- Bypass lane at metered ramp to freeway;
- Turn lane.

2. Exclusive Roadways
- Separate facility;
- Reversible median lanes;
- Exclusive freeway ramps.

3. Parking
- Reserved lots;
- Preferred rates.

3.7/ Priority Signals

Most of these measures, except parking, would also be used for public transit, and some may only be applicable to public transit. State-of-the-art reports are being prepared based on present experience, mainly in the United States and Europe, and these will be used to develop guidelines on which demonstrations in appropriate locations can be based.

4/ PROGRAM GOALS

At the start of the program in August 1978, overall targets were set for the growth of car and vanpooling. For carpooling, it was set at the creation of 5000 new carpools by the end of 1983. For vanpooling, the targets were broken down into several categories as shown in Table 1.

Table 1/ Targets for Growth of Vanpools in Ontario, set August 1978

	Number of vans by end of			
	1978	1980	1983	1990
Existing Programs at 3M Chrysler, and Sarnia	63	80 (86)	100	150
New Employer-Based Programs	0	35 (35)	450	1250
Third Party (Incl. Ontario Government)	3	45 (50)	450	1600
Total	66	160 (171)	1000	3000

These targets were preliminarily set with the intention that they be updated as experience was gained and depending on resource availability.

5/ RESULTS

Based on commitments made up to May 1980, it appears that the growth target for vanpools at the end of 1980 will be exceeded. Revised projections based on expectations as of May 1980 are shown in brackets in Table 1.

Major factors which affect the total number of carpools include the price and availability of gasoline and the general state of the economy. It is unlikely that it will ever be possible to separate and measures these effects to the extent necessary to obtain any quantitative measure of the success of the promotion campaign. This can probably only be done by a qualitative assessment of the acceptance and reaction by local government, public, and media, and the success of individual elements of the program. Results achieved up to May 1980 are outlined in the following sections.

5.1/ Local Government Response

The present status of the municipal outreach effort is summarized in Table 2. Included are the 13 municipalities given first priority. These 13 account for more than 85% of the commuter trips in Ontario. In virtually all cases, a positive and cooperative response has been received. Four joint seminars have been conducted for employers in North York, Peel, Sudbury, and Durham. Manufactures were pleased to supply demonstration vans for display at the seminars, and the companies which pioneered vanpooling in Canada - Chrysler, 3M, and Bell Canada - were very willing to participate.

In two locations, Timmins and Fauquier/Moonbeam, where a single employer predominated, a joint approach is being made to that employer alone.

Three reginal municipalities are implementing carpool matching systems for their own employees with the option to expand to include vanpools if the demand exists.

Table 2/ Status of Municipal Outreach, May 1980

	Presentation to council and/or senior planners	Local Co-ordinator appointed	Joint Approach to employers	Employee Program
North York (Toronto)	●		●	
Peel Region	●	●	●	●
Sudbury	●	●	●	●
Durham Region	●	●	●	●
Hamilton/Wentworth	●	●	o*	
Ottawa/Carlton	●	●		
Niagara Region	●			
London	●		o*	
Kitchener/Waterloo			o*	
Thunder Bay	●			
Timmins			●	
Faquier/Moonbeam	●		●	
Windsor	o			

● Accomplished
o Planned
* in association with chamber of commerce

Table 3/ Existing Vanpools, May 1980

Company	Location	Start Up	Vans Operating	Vans on Order
Employee Associations	Sarnia	1965	30 (approx)	-
Chrysler	Windsor	1977	32	-
Chrysler	Ajax	1978	8	-
3M	London	1978	13	3
MTC/OVPO	Toronto	1979	3	-
Bell Canada	Toronto	1979	3	-
Johns Manville	Toronto	1980	1	-
Garrett	Toronto	1980	1	2
Total			91	15

5.2/ Private Sector Response

Up to May 1980, 115 employers had been approached and supplied with information on ridesharing. This represents about one-half the total number identified as being prime candidates for ridesharing programs, all of which are targeted to be approached before March 1981. Individual or group presentations have been made to 80 companies, most in the joint employer seminars which have led to follow up contact with about 20 companies. A significant number of companies have approached MTC requesting information with initial contact established in a variety of ways including:

- information brochures distributed at exhibitions (has already led to implementation of one vanpool program);
- referal by administrator of existing vanpool program (led to implementation of one vanpool program);
- articles in press, either as a result of press release or coverage of employer seminars;
- contact between employees riding in MTC vanpools and employees of other companies;
- referal by local MPP aware of program;
- referal by local municipal officials aware of program;
- referal by MTC regional offices.

To date the MTC has assisted three companies to establish their vanpool operations and five others are committed to implementation. Table three shows the number of vanpools involved in these and previous vanpool programs. Another 15 to 20 companies are actively evaluating the concept and are regarded as strong prospects for implementation. The original targets set for the growth of company-based vanpools now appear conservative.

5.3/ Third Party

It is too early to report any results from the third party program.

5.4/ Commuter Parking

The construction of the initial six parking lots in the fall of 1979 led to an immediate increase of 50% in parking, compared to the amount of unofficial parking which had been previously identified. One lot, at

Trafalgar Road and Highway 401, had to be expanded within a few weeks to accommodate the additional demand. As a result of the favourable response and the demands received for parking in other areas, the evaluation period was shortened from one year to six months, and an ongoing program for expansion developed.

The consultants' study of existing parking areas investigated 150 possible sites and recommended 21 existing and five new lots as the best locations. If implemented, this would bring the total number of commuter parking lots in the Toronto commutershed to 39, including those already planned for construction this summer.

6/ CONCLUSIONS

The elements of the program, which have progressed to the point where they can be judged, appear to be achieving the desired results. Attitudes among governments, employers, the public, and media are now all supportive of the need for comprehensive action to promote ridesharing, largely as a result of concerns relating to the current energy situation. The measures being taken in the program will serve not only to reduce energy consumption, but will place the province in a better position to minimize the adverse effects of fuel shortages should they actually occur.

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